PTO 09-6877

CC=DD DATE=19781115 KIND=A
PN=132848

SUCTION CUSHION FOR REMOVING EXCESS NARCOSIS GASES AT THE PATIENT'S HEAD [ABSAUGKISSEN ZUR ENTFERNUNG ÜBERSCHÜSSIGER NARKOSEGASE AM PATIENTENKOPF]

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UNITED STATES PATENT AND TRADEMARK OFFICE
Washington, D.C. July 2009

Translated by: FLS, Inc.

PUBLICATION COUNTRY	(19):	DD
DOCUMENT NUMBER	(11):	132848
DOCUMENT KIND	(12):	A
PUBLICATION DATE	(44):	19781115
APPLICATION NUMBER	(21):	WP A 61 M /200 204
APPLICATION DATE	(22):	19770721
INTERNATIONAL CLASSIFICATION	(51):	A 61 N 17/02
PRIORITY COUNTRY	(33):	NA
PRIORITY NUMBER	(31):	NA
PRIORITY DATE	(32):	NA
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TITLE	(54):	SUCTION CUSHION FOR REMOVING EXCESS NARCOSIS GASES AT THE PATIENT'S HEAD
FOREIGN TITLE	[54A]:	ABSAUGKISSEN ZUR ENTFERNUNG ÜBERSCHÜSSIGER NARKOSEGASE AM PATIENTENKOPF

Description /1*

Area of application of the invention

The invention concerns the construction of a suction cushion for removing excess narcosis gases at the patient's head. The ventilation device serves for maintaining the purity of the atmosphere of the anesthetist's working area in the operating or diagnostic room.

Characteristics of the known technical solutions

The overpressure valve of the half-closed system, the non-rebreathing valve of the half-open system, and the incompletely sealed rubber mask resting on the skin in the area of the nose-mouth triangle of the patient to be narcotized are significant emission sources for the appearance of excess narcosis gases on the narcosis apparatus. For the above-mentioned two emission sources there are technical solutions for eliminating the narcosis gases which act on the anesthetist and which cannot be considered as harmless to his health over a period of years. According to:

M. Lüder "Methoden zur Eliminierung überschüssiger Narcosegase und -dämpfe" (Methods for eliminating excess narcosis gases and vapors), in Anaesthesiol. u. Reanimat., Berlin 1, 2; 96-102 (1976), and /2

H. Strecker "Technische Möglichkeiten der Beseitigung von Narkoseüberschußgasen aus dem Operationssaal (Technical

*Numbers in the margin indicate pagination in the foreign text.

possibilities for eliminating excess narcosis gases from the operating room)", pp. 171-180 in "Schädigungen des Anesthesie-Personals durch Narkosegase und -dämpfe (Injuries to anesthesia personnel from narcosis gases and vapors)", W. F. Henschel and Ch. Lehmann eds., vol. 89 Anaesthesiology und Reanimation, Springer Verlag, Berlin, etc. 1975,

these essentially consist in encapsulating the above-mentioned emission sources and sucking these substances away from them.

The elimination of the substances from the narcosis mask has also not yet been satisfactorily solved up to now. Covering the patient's head with a transparent plastic hood is impractical, disturbing, and even hinders the anesthetist during narcosis administration.

Goal of the invention

The goal of the invention is to create a device that makes it possible to suck away the at times considerable amounts of gaseous narcotics that appear on the patient's mask during narcosis, so that a true hygienic effect is achieved, it being understood that the halothane concentrations are lowered below the MAK_D value (= 50 mg/m^3) and MAK_K value (= 150 mg/m^3) in effect up to now, and also the nitrous oxide (N_2O) concentration is significantly reduced. /3

Discussion of the essence of the invention

The gaseous substances appearing at the indicated emissions source are specifically heavier than air and thus immediately fall away from the patient's head. The goal of the invention was achieved by developing a device that ensures the removal of the gaseous substances. It has a cushion-shaped form. The patient's head and the beginning of his neck lie in it. In the area of the upper surface of the cushion there are holes of corresponding diameter arranged around the head and the neck. The excess narcosis gases fall onto these holes, since a specific partial vacuum $-\Delta p$ acts on them, into the hollow space, and then are sucked out by the partial vacuum.

Specific embodiment /4

The cushion made of cast resin has bearing surface dimensions of approximately 400 mm x 400 mm. The casing of the cushion is approximately 3 mm thick. It consists of a brass sheet on the bearing surface side. The interior of the body is hollow and the upper surface is contoured so that a semicircular recess for the patient's head, and beyond that a semi-cylindrical recess for his neck, are present in the center. There is a saddle-shaped surface, 30 to 50 mm wide, somewhat arched inward, which is provided with a number of holes, closed peripherally on all sides, on the upper edge of the recess. These holes are connected with the hollow body. Then the upper surface expands abruptly from the outer edge of the saddle, at

an angle of 60° to 75°, downward. This surface is also connected on the right, left, and above with a further number of holes. It is advantageous for the total number of drilled holes to be 80 - 100. A pipe is incorporated into one side of the cushion as a suction connection (for a connecting hose) for connection with a central suction unit.

The cushion acts by collecting the gases in the area of the saddle and on the peripheral discharge surface beside the head of the patient and sucking the gases into the hollow body. The gases pass from the hollow body through the suction connection into the open as a result of the partial vacuum generated by the suction source (fan).

Patent Claims /5

1. A suction cushion for removing excess narcosis gases at the patient's head, wherein a recess of the appropriate length, adapted to the head and the neck, is made in the upper surface of this suction cushion, the base of which is made as a hollow body, and a 3 to 5 cm wide somewhat concave surface having a number of holes, on the periphery of this recess is placed tightly around the head and neck.

2. The suction cushion according to Claim 1, wherein the border on the bearing surface is made of metal or plastic and the upper border characteristic of the form consists of plastic.

3. The suction cushion according to Claims 1 and 2, wherein there are preferably 80-120 holes located on the concave surface and they are spaced 2 mm to 5 mm apart.

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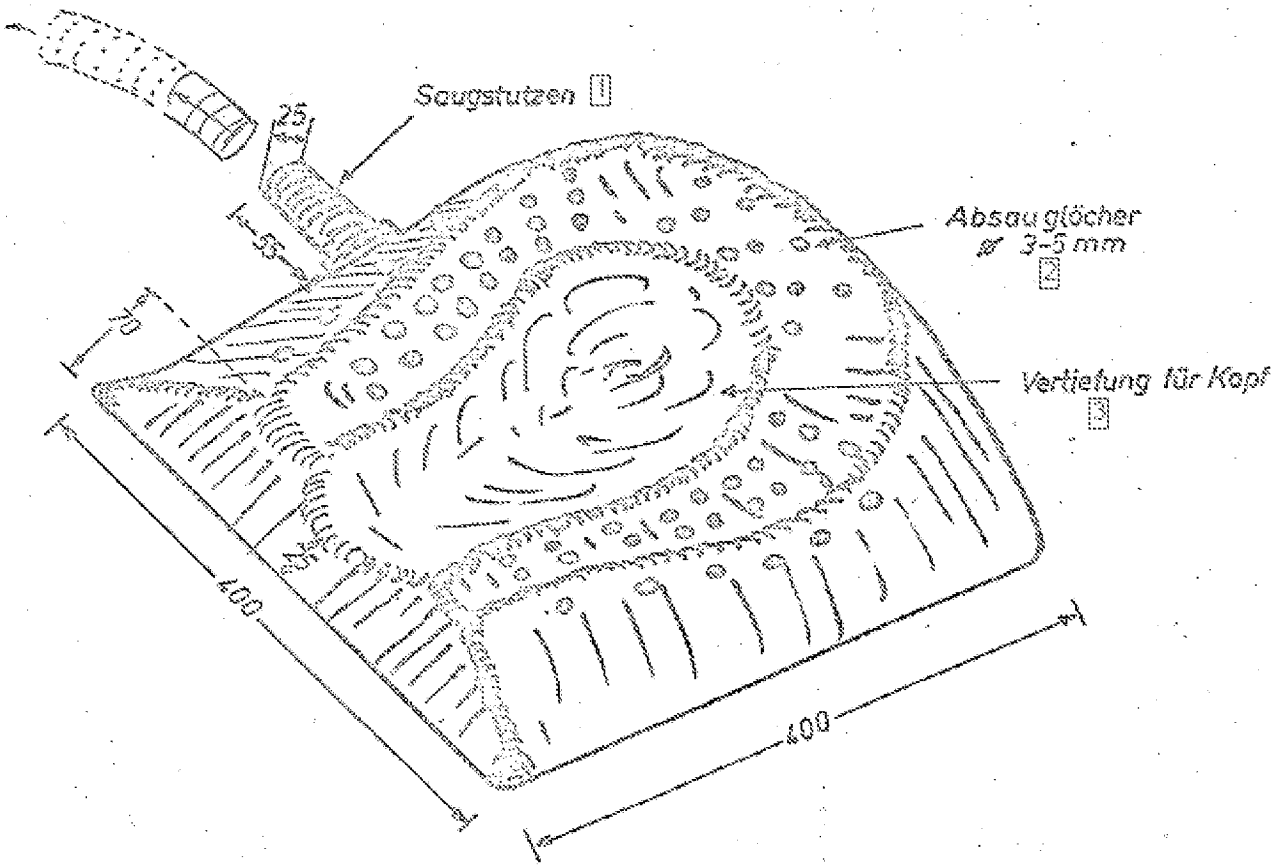
1 page of drawings appended



Key: 1 - suction connection; 2 - suction holes 3-5 mm diameter; 3 - recess for head